Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) An X-ray detector with detector elements arranged in a layer, wherein every detector element comprises a sensor unit and a processing circuit coupled thereto, and wherein a shielding of variable shielding effectiveness is disposed in front of the processing circuit.

2. (Currently amended) The X-ray detector according to claim 1, wherein the shielding has a variable effective thickness.

3. (Currently amended) The X-ray detector according to claim 1, wherein a scintillator unit is disposed in front of each sensor unit.

4. (Currently amended) The X-ray detector according to claim 3, wherein the scintillator unit and the shielding are arranged in a gapless way in a common layer.

5. (Currently amended) The X-ray detector according to claim 2, wherein the shielding is formed as a section.

6. (Currently amended) The X-ray detector according to claim 5, wherein the section comprises a spatially shaped strip.

7. (Currently amended) The X-ray detector according to claim 5, wherein the section is L-shaped.

8. (Currently amended) The X-ray detector according to claim 5, wherein the section is ~~trapezoidal or~~ triangular.

9. (Currently amended) The X-ray detector according to claim 1, wherein material of the shielding contains at least one of the following substances: Pb, W, Mo, Ta, Ti, $BaSO_4$, $BaCO_3$, BaO, $PbCO_3$, $PbCl_2$, $PbSO_4$, TiO_2 and/or ZnO.

10. (Currently amended) The X-ray detector according to claim 9, wherein said material is embedded in an epoxy-resin carrier.

11. (Currently amended) The X-ray detector according to claim 1, wherein the sensor units and the processing circuits are arranged in a common layer.

12. (Currently amended) An X-ray detector with detector elements arranged in a layer comprising a layer of scintillator units disposed in front of a layer of sensor units, the scintillator units being separated from each other by a shielding that has a high shielding effectiveness with respect to X-rays and a high reflectivity with respect to photons produced in the scintillator units, and every detector element includes a sensor unit and a processing circuit coupled thereto, wherein a shielding, with continuously or discretely varying absorption coefficients for X-rays, is disposed in front of the processing circuit so that it only shields radiation sensitive regions of the processing circuit.

13. (New) The X-ray detector according to claim 1, wherein the shielding is disposed only in front of regions of the processing circuit that are to be protected against X-radiation and between a direction of incidence of X-rays and the regions.

14. (New) The X-ray detector according to claim 1, wherein the shielding is continuously composed of different materials with different absorption coefficients for X-rays along a direction orthogonal to a direction of incidence of X-rays.

15. (New) The X-ray detector according to claim 1, wherein the shielding is discretely composed of different materials with different absorption coefficients for X-rays along a direction orthogonal to a direction of incidence of X-rays.

16. (New) The X-ray detector according to claim 1, wherein the shielding is L-shaped, and the entirety of the L-shaped shielding resides directly in front of the processing circuit between the processing circuit and incident x-rays.

17. (New) The X-ray detector according to claim 1, wherein material of the shielding contains at least one of the following substances: W, Mo, Ta, Ti, $BaSO_4$, $BaCO_3$, BaO, TiO_2 or ZnO.

18. (New) A method, comprising: shielding a radiation sensitive region of a processing circuit of a radiation sensitive detector from radiation incident on a radiation sensitive surface of the detector; wherein the x-ray absorption coefficient of the shielding varies in a direction orthogonal to a direction of incident x-rays along the radiation sensitive region, thereby the shielding is not the same in all places in front of the processing circuit.

19. (New) The method of claim 18, wherein the shielding is triangular in shape and varies in thickness in the direction orthogonal to the direction of incident x-rays.

20. (New) The method of claim 18, wherein the shielding is composed of two or more materials with different absorption coefficients for X-rays in the direction orthogonal to the direction of incident x-rays.